

# TORQUE RIPPLE AND AUDIBLE NOISE REDUCTION IN AN ELECTRIC MACHINE

## ABSTRACT OF THE DISCLOSURE

A method to reduce torque ripple and audible noise in an electric machine, the method comprising: initiating a rotation of said electric machine at a determinable velocity; detecting at least one phase voltage signal indicative of a back electromotive force (BEMF); synthesizing at least one waveform indicative of the BEMF; and scaling a command to the electric machine based on the at least one waveform. A system to reduce torque ripple and audible noise in an electric machine comprising: an electric machine in operable communication with a control circuit configured to generate a voltage command to control each phase of the electric machine and including a controller. The controller is configured to: detect at least one phase voltage signal indicative of a back electromotive force (BEMF); synthesize at least one waveform indicative of the BEMF; and scale a command to the electric machine based on the at least one waveform.